

REMARKS

Claims 14-26 and 31-36 are currently pending with claims 14, 23, 24 and 26 being in independent form. Claims 14, 15, 18, 19, 23-26 are amended and claims 31-36 are added for the Examiner's consideration. Support for the amendment to claim 14 and new claims 31-36 can be found at least on paragraph [0037] of the specification and Fig. 7. Reconsideration of the Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be appropriate.

Allowable Claims

Applicants note that claims 23-26 were not specifically indicated to contain allowable subject matter. However, as these claims were not rejected on the basis of prior art, Applicants are fully justified in believing that these claims contain allowable subject matter. Accordingly, Applicants have herein presented claims 23, 24 and 26 in independent form and request allowance of at least claims 23-26. Additionally, Applicants submit that all of the pending claims are in condition for allowance for the following reasons.

Disclosure Objection

The specification was objected to because the unit "atoms/centimeter" refers to concentration and was not correctly indicated as atoms/cubic centimeter. Applicants do not disagree. By this Amendment, Applicants have therefore amended the paragraphs of the specification which recite this unit consistent with the Examiner's comments. Accordingly, Applicants respectfully request that this basis of objection be withdrawn.

Claim Objections

Claims 14, 15, 18, 19 and 23-26 were objected to on the basis of a number of asserted informalities. Applicants do not disagree with the Examiner's assertions. By this Amendment, Applicants have therefore amended these claims consistent with the

Examiner's comments. Accordingly, Applicants respectfully request that this basis of objection be withdrawn.

35 U.S.C. § 112, 2nd paragraph, Rejection

Claims 24-26 were rejected on the basis of 35 U.S.C. § 112, 2nd paragraph, as allegedly being indefinite. Applicants respectfully disagree with the Examiner's assertions.

The Examiner quotes certain language of the claims and asserts that the claims are indefinite. Conspicuously absent from the Examiner's assertions, however, is an explanation as to how or why the recited features are indefinite. Applicants note that this feature is discussed in the instant specification on, e.g., paragraph [0025] and is fully supported by the disclosure. Moreover, Applicants have specified examples of concentrations which would produce the results recited in these claims. Thus, one having ordinary skill in the art, having read the specification and drawings, would have no difficulty in understanding these claims. Nor has the Examiner demonstrated otherwise. Accordingly, Applicants respectfully request that this basis of rejection be withdrawn.

Rejections Under 35 U.S.C. § 102(e)

Over Chau

Claims 14-17, 20 and 22 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,538,278 to CHAU. This rejection is respectfully traversed.

A rejection under 35 U.S.C. § 102(e) is proper only when a single reference discloses each and every feature recited in the rejected claim(s). The Examiner asserts that CHAU discloses each and every feature recited in at least claim 14. Applicants respectfully disagree.

Applicants submit that CHAU fails to disclose, or even suggest, for example, a first active device formed on the substrate, the first active device having a first gate dielectric, which has a first concentration of nitrogen and a second active device formed

on the substrate, the second active device having a second gate dielectric, which has a second concentration of nitrogen different than the first concentration of nitrogen, wherein the second gate dielectric is thicker than the first gate dielectric (claim 14).

Applicants acknowledge that CHAU discloses a semiconductor device 200 having a first active device (n-FET 210) formed on the substrate 202, the first active device having a first gate dielectric 220, which has a first concentration of nitrogen 222 or 226 and a second active device (p-FET 250) formed on the substrate 202, the second active device having a second gate dielectric 260, which has a second concentration of nitrogen 264 different than the first concentration of nitrogen. However, CHAU states at col. 4, lines 40-42, that the first gate dielectric 220 has a thickness in the range of 20-50 Å, and at col. 5, lines 1-3, that the second gate dielectric 260 has a thickness in the range of 20-50 Å. While such language arguably discloses or suggests that the first and second gate dielectrics can have the same thickness, this language does not disclose, or even suggest, that the second gate dielectric 260 is thicker than the first gate dielectric 220.

Thus, Applicants submit that claim 14 and the above-noted claims which depend therefrom are not disclosed, or even suggested, by any proper reading of CHAU.

Applicants respectfully request that the rejection of the above-noted claims be withdrawn.

Over Beaman

Claims 14, 18, 19 and 21 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,690,046 to BEAMAN et al. This rejection is respectfully traversed.

The Examiner asserts that BEAMAN discloses each and every feature recited in at least claim 14. Applicants respectfully disagree.

Applicants submit that BEAMAN fails to disclose, or even suggest, for example, a first active device formed on the substrate, the first active device having a first gate dielectric, which has a first concentration of nitrogen and a second active device formed on the substrate, the second active device having a second gate dielectric, which has a

second concentration of nitrogen different than the first concentration of nitrogen, wherein the second gate dielectric is thicker than the first gate dielectric (claim 14).

Applicants acknowledge that BEAMAN (see Fig. 7) discloses a semiconductor device 10 having a first active device (n-FET 14) formed on the substrate 16, the first active device having a first gate dielectric 24, and a second active device (p-FET 12) formed on the substrate 16, the second active device having a second gate dielectric 18, which has a second concentration of nitrogen (see col. 3, lines 41-46). However, BEAMAN states at col. 5, line 25 that the first gate dielectric 24 is merely an oxide layer. BEAMAN does not appear to disclose or suggest that the first gate dielectric 24 can contain any nitrogen. Moreover, whereas the invention provides that the first gate dielectric is thinner and the second gate dielectric, BEAMAN discloses that the first gate dielectric 24 is thicker than the second dielectric 18 (see Fig. 7 and col. 5, lines 37-43). Thus, whereas the invention provides for both the first and second gate dielectrics having different concentrations of nitrogen and that the first gate dielectric is thinner than the second gate dielectric, BEAMAN provides that only the second gate dielectric 18 has a nitrogen concentration and a first gate dielectric 24 that is thicker than the second gate dielectric 18.

Thus, Applicants submit that claim 14 and the above-noted claims which depend therefrom are not disclosed, or even suggested, by any proper reading of BEAMAN.

Applicants respectfully request that the rejection of the above-noted claims be withdrawn.

Over Chou

Claim 14-16, 20 and 22 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,821,833 to CHOU et al. This rejection is respectfully traversed.

The Examiner asserts that CHOU discloses each and every feature recited in at least claim 14. Applicants respectfully disagree.

Applicants submit that CHOU fails to disclose, or even suggest, for example, a first active device formed on the substrate, the first active device having a first gate

dielectric, which has a first concentration of nitrogen and a second active device formed on the substrate, the second active device having a second gate dielectric, which has a second concentration of nitrogen different than the first concentration of nitrogen, wherein the second gate dielectric is thicker than the first gate dielectric (claim 14).

Applicants acknowledge that CHOU (see Fig. 5F) discloses a semiconductor device 10 having a first active device (n-FET 14) formed on the substrate 12, the first active device having a first gate dielectric 18C, which has a first concentration of nitrogen and a second active device (p-FET 16) formed on the substrate 12, the second active device having a second gate dielectric 18B, which has a second concentration of nitrogen different than the first concentration of nitrogen (see col. 7, lines 26-33). However, CHOU does not appear to disclose, or even suggest, that the second gate dielectric 18B is thicker than the first gate dielectric 18C.

Thus, Applicants submit that claim 14 and the above-noted claims which depend therefrom are not disclosed, or even suggested, by any proper reading of CHOU.

Applicants respectfully request that the rejection of the above-noted claims be withdrawn.

New Claims are also Allowable

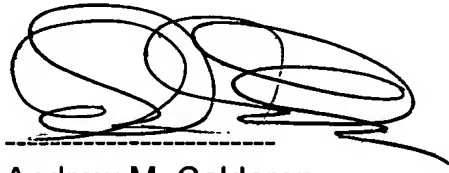
Applicants submit that the new claims 31-36 are allowable over the applied art of record. Specifically, claims 31-36 depend from claim 14 and recite additional features which are believed to be allowable. Accordingly, Applicants respectfully request consideration of these claims and further requests that the above-noted claims be indicated as being allowable.

CONCLUSION

In view of the foregoing, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if needed.

Authorization is hereby given to refund excess payments and charge any additional fee necessary to have this paper entered to Deposit Account No. 09-0456.

Respectfully submitted,
Jay S. Burnham et al.

A handwritten signature in black ink, appearing to read "Andrew M. Calderon", written over a horizontal dashed line.

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